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Conference Abstract

Experiences from the Danish Fungal Atlas: Linking mushrooming, nature conservation and primary biodiversity research

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Abstract

The Danish Fungal Atlas is a citizen science project launched in 2009 in collaboration among the University of Copenhagen, Mycokey and the Danish Mycological Society. The associated database now holds almost 1 million fungal records, contributed by more than 3000 recorders. The records represent more than 8000 fungal species, of which several hundred have been recorded as new to Denmark during the project. In addition several species have been described as new to science. Data are syncronized with the Global Biodiversity Information Facility (GBIF) on a weekly basis, and is hence freely available for research and nature conservation. Data have been used for systematic conservation planning in Denmark, and several research papers have used data to explore subjects such as host selection in wood-inhabiting fungi (Heilmann-Clausen et al. 2016), recording bias in citizen science (Geldmann et al. 2016), fungal traits (Krah et al. 2019), biodiversity patterns (e.g. Andrew et al. 2018), and species discovery (Heilmann-Clausen et al. 2019). The project database is designed to faciliate direct interactions and communication among volunteers. The validation of submitted records is interactive and combines species-specific smart filters, user credibility, and expert tools to secure the highest possible data

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credibility. In 2019, an AI (artificial intelligence) trained species identification tool was launched along with a new mobile app, enabling users to identify and record species directly in the field (Sulc et al. 2020). At the same time, DNA sequencing was tested as an option to test difficult identifications, and in 2021 a high-throughput sequencing facility was developed to allow DNA sequencing of hundreds of fungal collections at a low cost. The presentation will give details on data validation, data use and how we have worked with cultivation of volunteers to provide a truly coherent model for collaboration on mushroom citizen science.

Keywords

Citizen science, DNA sequencing, fungi, species identification, validation of species data

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